WHAT IS CLAIMED IS:

1.   A shape information coder for coding shape information
represented by a set of pixels, comprising:

     resolution converting means dividing said set of pixels
into a plurality of mutually exclusive subsets, each subset
among said plurality of subsets representing a different
subsampling of said shape information and having lower
resolution than said shape information;

     memory means coupled to said resolution converter,
storing said subsets;

     context generating means coupled to said memory means,
selecting reference pixels from said memory means for each
pixel in said subsets, and generating context information
for each said pixel from the reference pixels selected
therefor; and

     coding means coupled to said context generating means,
coding each said subset according to the context information
of the pixels in said subset.

2.   The shape information coder of claim 1, wherein for
each pixel in one of said subsets, said context generating
means selects reference pixels from at least two of said
subsets.

3.   The shape information coder of claim 2, wherein for
each said pixel in said one of said subsets, said context
generating means selects reference pixels that have already
been coded and are disposed on all sides of said pixel.

4.   The shape information coder of claim 1, wherein said
context generating means, in generating said context
information, assigns at least two different combinations of

values of said reference pixels to a single value of said context information.

5.   The shape information coder of claim 1, wherein said resolution converting means generates, as said subsets, four subsets, each having a resolution reduced by a factor of two horizontally and vertically with respect to said shape information.

6.   The shape information coder of claim 1, wherein said memory means comprises a plurality of memories each storing a different subset among said subsets.

7.   The shape information coder of claim 6, wherein said coding means comprises a plurality of pixel coders concurrently coding the subsets stored in respective memories, and said context generating means comprises a plurality of context generators supplying context information to respective pixel coders.

8.   A hierarchical shape information coder comprising a plurality of cascaded stages, from a highest-resolution stage to a lowest-resolution stage, each stage among said stages being separately structured as described in claim 1, each stage except said highest-resolution stage having a next-higher-resolution stage among said stages, the resolution converting means in each said stage except said highest-resolution stage receiving, as said shape information, one subset among the subsets generated by the resolution converting means in the next-higher-resolution stage.

9.   The hierarchical shape information coder of claim 8, wherein the context generating means in each said stage

except said highest-resolution stage supplies context information to the coding means in the next-higher-resolution stage, and the shape information received by the resolution converting means in each said stage is not stored in the memory means in said next-higher-resolution stage.

10. A shape information decoder for decoding coded shape information, comprising:

decoding means decoding said coded shape information according to context information, thereby generating a plurality of subsets of pixels;

memory means coupled to said decoding means, storing said subsets of pixels;

context generating means coupled to said memory means, selecting, for each pixel in said subsets, reference pixels already decoded by said decoding means, and generating said context information from the selected reference pixels; and

resolution deconverting means combining said subsets of pixels to generate shape information having a higher resolution than in any one of said subsets.

11. The shape information decoder of claim 10, wherein for each pixel in one of said subsets, said context generating means selects reference pixels from at least two of said subsets.

12. The shape information decoder of claim 11, wherein for each said pixel in said one of said subsets, said context generator selects reference pixels disposed on all sides of said pixel in said shape information.

13. The shape information decoder of claim 10, wherein said context generator, in generating said context information, assigns at least two different combinations of values of

said reference pixels to a single value of said context information.

14. The shape information decoder of claim 10, wherein said decoding means generates, as said subsets, four subsets, each having one-half the resolution of said shape information horizontally and vertically.

15. The shape information decoder of claim 10, wherein said memory means comprises a plurality of memories each storing a different subset among said subsets.

16. The shape information decoder of claim 15, wherein said decoding means comprises a plurality of pixel decoders, each concurrently generating a different subset among said subsets, and said context generating means comprises a plurality of context generators supplying context information to respective pixel decoders.

17. A hierarchical shape information decoder comprising a plurality of cascaded stages, from a highest-resolution stage to a lowest-resolution stage, each stage among said stages being separately structured as described in claim 10, each stage except said highest-resolution stage having a next-higher-resolution stage among said stages, the shape information generated by the resolution deconverter in each said stage except said highest-resolution stage being provided to the next-higher-resolution stage as one subset among the subsets in said next-higher-resolution stage.

18. The hierarchical shape information decoder of claim 17, wherein the context generating means in each said stage except said highest-resolution stage provides context information to the decoding means in the next-higher-

resolution stage, and the shape information received by said next-higher-resolution stage is not stored in the memory means in said next-higher-resolution stage.

19. A context generator generating context information for use in image processing, comprising:

a reference pixel position and context simplification memory storing first information specifying positions of reference pixels, and second information specifying rules for converting discrete context information to simplified context information;

a reference pixel generator coupled to said reference pixel position and context simplification memory, generating said discrete context information by obtaining values of the reference pixels in the positions specified by said first information; and

a context converter coupled to said reference pixel generator, converting said discrete context information to said simplified context information according to said second information, said simplified context information having fewer states than said discrete context information.

20. A shape information coder comprising the context generator of claim 19.

21. A shape information decoder comprising the context generator of claim 19.